

ON A SMALL COLLECTION OF MARINE SHELLS FROM NEW ZEALAND AND MACQUARIE ISLAND, WITH DESCRIPTIONS OF NEW SPECIES.

By EDGAR A. SMITH, F.Z.S., etc.

Read 10th December, 1897.

THE series of shells here referred to and described, were kindly placed at my disposal by Mr. Henry Suter, of Christchurch, New Zealand. Those from Macquarie Island, situated to the south-west of New Zealand, are of especial interest, since five out of the eight species are well-known Patagonian forms. The three others also, supposed to be new species, will probably eventually be found in Patagonia. They were collected by Mr. A. Hamilton, who thus writes respecting them:—"The shells collected by me at Macquarie Island were all from Lusitania Bay, on the north-east side of the island. The large red, or scarlet, bivalve¹ was attached to the large floating kelp by a strong fleshy foot adhering very firmly, sometimes three or four together. The small univalves, *Paludestrina*, and the small *Lasea* and *Modiolarca*, were obtained by scraping a small moss-like seaweed from the rocks (volcanic breccia) between tide-marks. The range of tide is not great—four or five feet—at that part. Unfortunately, I did not see the flat tidal reef in the north of the island below the Nuggets until the day I left. On these reefs much might be found. The currents set strongly from west to east at this place at the time of the year when I was there."

It is a fact well known to botanists that quite a considerable number of species of seaweeds are common to the Patagonian region and the shores of New Zealand, the wide distribution doubtless being caused by ocean currents. The shells from Macquarie Island are all such as either attach themselves to, or might be found living upon, floating algae. They evidently have been transported in this way, and the presence of some of them at Kerguelen and other localities between Patagonia and Macquarie Island would seem to indicate the direction in which the species have travelled, namely, from west to east, confirming Mr. Hamilton's statement with regard to the ocean currents. Already a few species of Mollusca have been quoted as common to the two regions, e.g., *Mytilus Magellanicus*, Chem., *M. chorus*, Molin., *Saxicava arctica*, L., and *Callochiton illuminatus*, Gray; also *Euthria antarctica*, Reeve, and *Patella Magellanica*, Gmel.,

¹ *Modiolarca trapezina*.

but the two last-mentioned are somewhat doubtful. There are other forms which, although not absolutely identical with South Patagonian species, are represented in that locality by very closely related forms. For instance, *Lotorium vexillum*, Sby., from Chiloe and Cape Horn, is scarcely separable from *L. tumidum*, Dkr.

Trophon spiratus, H. & A. Ad., and *T. cretaceus*, Reeve, are represented in the Straits of Magellan by *T. Geversianus*, Pallas. *Patella denticulata*, Martyn, is allied to *P. aenea*, Martyn; and the genus *Struthiolaria*, which was supposed to be restricted to New Zealand, has of recent years found a representative at Kerguelen Island, in *S. (Perissodonta) mirabilis*, Smith.

Some of the species already mentioned also occur at the Cape of Good Hope, namely, *Mytilus Magellanicus*, Chem., and *Saxicava arctica*, L.; whilst the *Lasæa rubra*, Mtg., is probably inseparable from the forms which occur in Patagonia and in Kerguelen and Macquarie Islands. Two species of *Lotorium* (*L. argus*, Smith, and *L. Murrayi*, Smith) occurring in South Africa have Patagonian representatives in *L. vexillum*, Sby., and *L. Magellanicum*, Chem., respectively. The islands of St. Paul and Amsterdam, in the Southern Indian Ocean, also appear to be affected slightly by the flow eastward of Patagonian forms. At all events, *Lasæa rubra*, Mtg., and *Lotorium vexillum*, Sby. (= *proditor*, Frfld.), have been quoted from there.¹ The conclusion seems to be that certain forms, whose metropolis at the present time is Patagonia, have been, through the agency of ocean currents, transported to quite distant localities. Patagonia, the Falkland Islands, Marion, Prince Edward, Crozet, and Kerguelen Islands have very similar faunas, and now Macquarie Island proves to some extent to belong to the same faunal region, to which, but in a less degree, also belong Tristan da Cunha, St. Paul, and Amsterdam Islands, a few of the Antarctic forms having also reached as far north as the Cape.

1. MITRA ALBOPICTA, n.sp. Fig. V. (p. 22.)

Testa breviter fusiformis, castanea, infra suturam strigis albis brevibus irregularibus picta, circa medium et ad basim anfractus ultimi albo maculata; spira conoidea, acuta; anfractus 7, paulo convexi, sutura medioeriter profunda sejuncti, superiores oblique et confertim costulati (costis in ultimo plus minus evanidis), striis spiralibus paucis infra suturam sculpti, ultimus ad basim oblique et tenuiter striatus; apertura intus fuscescens, longit. totius $\frac{1}{2}$ paulo superans; labrum superne leviter incrassatum; columella paululum obliqua, pallida, quadruplicata; canalis anterior brevis, vix recurvus. Long. 21.5, diam. 9.5 mm.

Hab.—Mokohinau Island.

In form and general proportions resembling *M. pica*, Reeve, but larger and differently coloured.

¹ Vélain, Arch. Zool. Expérim., 1877, vol. vi, pp. 100, 135.

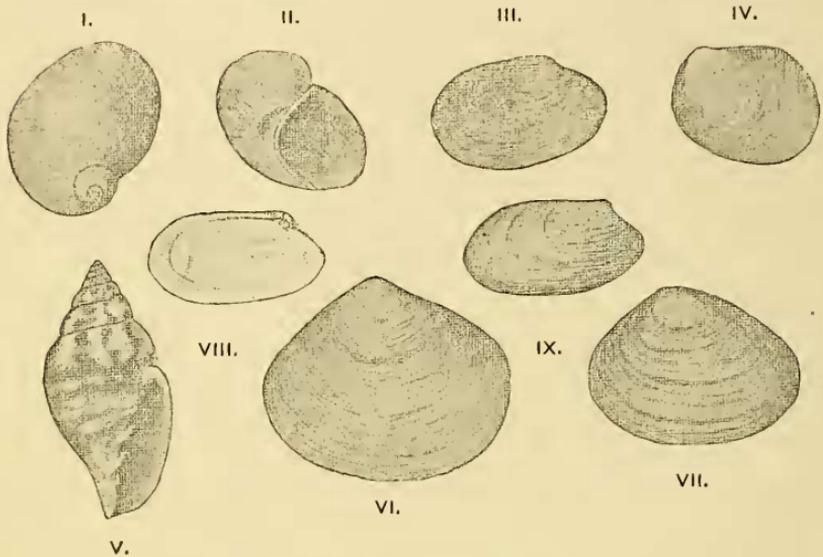
2. PALUDESTRINA CALIGINOSA (Gould).

Littorina caliginosa, Gould: U.S. Explor. Exped., Moll., p. 198, atlas, fig. 240; *Otia Conch.*, p. 53.

Hydrobia caliginosa, Smith: Phil. Trans. Roy. Soc., 1879, vol. clxviii, p. 173, pl. ix, fig. 8.

Hab.—Macquarie Island (A. Hamilton).

Previously recorded from Tierra del Fuego (Gould), Kerguelen (Smith, Studer, and Watson).



NEW SHELLS FROM NEW ZEALAND.

I, II. *Paludestrina Hamiltoni*, n.sp.

III. *Modiolarca bicolor*, n.sp.

IV. *Myrina minuta*, n.sp.

V. *Mitra albopicta*, n.sp.

VI. *Macoma Suteri*, n.sp.

VII. *Mactra ordinaria*, n.sp.

VIII, IX. *Cyamium oblongum*, n.sp.

3. PALUDESTRINA HAMILTONI, n.sp. Figs. I, II.

Testa subglobosa, anguste umbilicata, fuscescens, periostraco tenui olivaceo induta, lineis incrementi striata; spira brevis, obtusa; anfractus fere 3, convexi, perrapide accrescentes, sutura profunda subcanaliculata discreti, ultimus maximus, circa umbilicium leviter carinatus; apertura magna, rotunde ovata, fusca; peristoma tenue, continuum; operculum anfractibus $2\frac{1}{2}$ instructum. Diam. maj. 3, min. 2 mm.; alt. 3 mm.

Hab.—Macquarie Island (A. Hamilton).

A pretty little shell, recalling in some respects certain forms of the genus *Lacuna*.

4. *MACOMA SUTERI*, n.sp. Fig. VI.

Testa albida, paulo inæquilateralis, antice late rotundata, postice multo angustior, ad extremitatem acute arcuata, ad ventrem late curvata; margo dorsi anticus leviter obliquus, posticus magis obliquus; umbones prominentes, acuti; valvæ tenues, concentricè tenuiter striatæ, mediocriter convexæ; dentes duo cardinales divergentes in valva dextra, in sinistra unicus bifidus; pagina interna nitida, radiatim substriata; cicatrix antica parva, elongata, postica major, rotundata; sinus pallii profundus, rotundatus; ligamentum externum elongatum, parte antica prominente; internum (resilium) parvum, obliquum, postice declive. Long. 15, alt. 12, diam. 5·5 mm.

Hab.—Lyttelton Harbour, in 2–4 fathoms (Suter).

The presence of an internal ligament or resilium distinguishes this species from the typical form of *Macoma*, which is furnished with an external ligament only. The presence of an internal ligament in the British *Tellina donacina* and some other forms of Tellinidæ has already been pointed out by the writer in the Report on the "Challenger" Lamellibranchiata, p. 106; but what systematic value this character may possess has yet to be determined when the entire family is critically studied.

5. *MACTRA ORDINARIA*, n.sp. Fig. VII.

Testa triangulariter ovata, paulo inæquilateralis, alba, periostraco tenui griseo induta, concentricè tenuiter striata, supra dorsi arcam utrinque sulcata; margo dorsi posticus arcuatus, declivis, anticus æque obliquus sed rector, margo ventris minime curvatus; valvæ tenues, arcis dorsi utrinque plus minus circumscriptis; pagina interna alba; cicatrix anterior parva, pyriformis, posterior major, rotundata; sinus pallii latus, haud profundus; cardo normalis. Long. 13, alt. 9·5, diam. 5·5 mm.

Hab.—Lyttelton Harbour, in 4 fathoms.

This species probably attains larger dimensions than those here given. It is of ordinary appearance, but somewhat straight along the ventral margin and rather pointed at both ends.

6. *SAXICAVA ARCTICA* (Linn.).

Hab.—Macquarie Island (A. Hamilton).

Two specimens about 7 mm. in length appear undistinguishable from the cosmopolitan *S. arctica* (Linn.). In the Report upon the Lamellibranchiata of the "Challenger" Expedition, p. 78, a list is given of the numerous localities cited for this polymorphous species. It occurs both in Patagonia and Kerguelen Island.

7. *LASÆA MILIARIS* (Phil.), var.

Kellia miliaris, Philippi: Wiegmann's Archiv für Naturges., 1845, p. 51.

Hab.—Dunedin Harbour and Macquarie Island (A. Hamilton).

These specimens do not quite correspond with a series from the Straits of Magellan. They appear to be rather more solid, of a darker red colour, and perhaps a trifle more equilateral. This species, the British *L. rubra*, Mtg., and *L. consanguinea*, Smith, from Kerguelen, seem all to be slight modifications of one and the same form. *L. seminulum*, Phil. (= *rubra*, Mtg.), has been quoted by Sowerby as South African.

8. CYAMIUM OBLONGUM, n.sp. Figs. VIII, IX. (p. 22.)

Testa elongata, valde inæquilateralis, mediocriter convexa, alba; pars antica brevissima, acute rotundata, postica longissima, latius rotundata; linea dorsi posterior vix arcuata, horizontalis, anterior declivis, ventris margo leviter arcuatus; valvæ tenues, lineis incrementi tenuibus striatæ; pagina interna alba, nitida; dentes duo inæquales in valva sinistra, in dextra unicus; ligamentum internum gracile, leviter obliquum; cicatrix antica mediocriter profunda, postica inconspicua. Long. 5, alt. 3, diam. 2.5 mm.

Hab.—Macquarie Island (A. Hamilton).

9. MYRINA MINUTA, n.sp. Fig. IV. (p. 22.)

Testa minuta, transversim ovata, valde inæquilateralis, pallide fuscescens vel rufescens; valvæ tenues, convexæ, lineis incrementi tenuibus striatæ, margine supero et infero intus fortiter denticulatis; umbones inflati, obtusi, longe antemediani, linea carinis recta, utrinque transversim striata, in medio ligamento interrupta; pagina interna haud margaritacea, lævis; cicatrices obscuræ. Long. 2, alt. 1.5, diam. 1 mm.

Hab.—“Lyttelton Harbour, in tide-pools on seaweeds” (Suter).

This species is remarkable for the strong denticulate upper and lower margins of the valves. The striæ on the hinge-line are only visible under a compound microscope.

10. MODIOLARCA TRAPEZINA, Lamarck.

For synonymy and references see Smith, Report Lamellibranchiata “Challenger” Exped., p. 279.

Hab.—Macquarie Island (A. Hamilton).

Only bright purple-red specimens, the largest 16 mm. in length. The species is common at South Patagonia, the Falkland Islands, Marion and Kerguelen Islands.

11. MODIOLARCA PUSILLA (Gould).

Mytilus (Modiolarca) pusillus, Gould: U.S. Explor. Exped., Moll., p. 455, atlas, figs. 585–585c; Otia Conch., p. 95.

Modiolarca pusilla, Smith: Phil. Trans. Roy. Soc., 1879, vol. clxviii, p. 191.

Hab.—Tierra del Fuego (Gould); Macquarie Island (A. Hamilton).

The specimens from New Zealand are identical in every respect with those from Patagonia. *M. minuta*, Dall, from Kerguelen Island, is a closely allied form.

12. MODIOLARCA BICOLOR, n.sp. Fig. III. (p. 22.)

Testa parva, oblonga, antice alba, angustata, rotundata, postice purpureo-rufescens, latior, rotunde subquadrata, valde inæquilateralis; umbones leviter prominentes, longe antemediani, ad apicem obtusi; valvæ tenues, mediocriter convexæ, lineis incrementi tenuibus striatæ; dens unicus in valva sinistra, in dextra duo; ligamentum internum parvum, obliquum; pagina interna antice alba, postice rufescens, nitida; cicatrices magnæ, antica posteriore profundior. Long. 3·5, alt. 2, diam. 1·5 mm.

Hab.—Macquarie Island (A. Hamilton).

Distinguished from *M. pusilla* and *M. minuta*, Dall, by its very different form, the anterior end being conspicuously produced and narrowed.
